Pagurus dalli

Whiteknee Hermit Crab

Phylum: Arthropoda
Class: Malacostraca
Order: Decapoda
Family: Paguridae

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Taxonomy: *Benedict first described Pagurus dalli* in 1892 as *Eupagurus (Trigonochirus) dalli* (Lemaitre and McLaughlin 2021). The genus *Eupagurus* is no longer valid and has been replaced by *Pagurus* (Hemming 1958).

Description

Size: Maximum carapace width is 3.74 cm. (Abrams et al. 1986)
Color: Oregon specimens are usually red with white-banded legs and the obvious white knees on the distal end of the merus of the chelipeds (Cowles 2007) (Fig 1).
General Morphology: The body of most decapods, including *P. dalli,* contains the cephalothorax, which is a fused head and thorax, abdomen, chelipeds or claw arms, and pereopods, which are the legs.
Body: The dorsal side of the carapace is smooth and only partly calcified. The abdomen is curved. The right cheliped is longer than it is wide and is not extremely flattened. The dorsal carapace has a network of white, tan, mahogany, and red with a red margin. It does not have stiff bristle-like structures on its eye bases (Cowles, 2007)**.**
Mouthparts: Mouthparts of most decapods are made of 6 pairs of appendages: 1 pair of mandibles, 2 pairs of maxillae, and 3 pairs of maxillipeds (Ruppert et al., 2004).
Eyes: The eyes do not have a deep median furrow, and they terminate in a single spine. The carapace does not cover the base of the eyes (Cowles, 2007).
Sexual Dimorphism: Males are usually bigger than females (Abrams, 1988).

Possible Misidentifications:

Pagurus stevensae has a right claw that is more triangular than elongated and no white band on the merus of the chelipeds. *Pagurus kennerlyi* is another possible misidentification, with similar white bands on its merus. However, it has alternating light and dark bands on its second antennae and a stiff bristle-like structure on the base of its eyes. (Cowles, 2007)

Ecological Information

Range: Bering Sea to Oregon (Cowles, 2007).
Habitat: Gravel, sandy, or mud bottoms (Cowles, 2007).
Temperature: Usually tolerates temperatures ranging from 3-10 °C (Benedict, 1892).
Depth: Very low intertidal to 276 m (Cowles, 2007).
Associates: Sponges, hydroids, and barnacles are often found growing on *P. dalli* shells (Cowles, 2007) (Fig. 1)**.**
Abundance: Widespread but not abundant (Cowles, 2007)**.**

Life-History Information

Reproduction: Males deposit spermatophores along the female's abdomen after molting. The sperm is stored, and the female fertilizes eggs once they are laid. Eggs are carried for about one month before hatching (Elwood et al., 1987).
Larva: Exact larval forms and molting times are unknown for this species. Other members of the genus exhibit 4 zoeal stages and a final megalopa stage (Squires, 1996).
Juvenile: Unknown for this species.
Longevity: Unknown.
Growth Rate: A molt precedes body growth. Shell size and availability are suggested to strongly affect growth rate (Wada et al., 1997).

Food: Full diet is unknown, but there is some evidence they may eat plankton (see Cowles 2007).
Predators: Fish, true crabs, octopuses, and birds are known predators of other hermit crab species.
Behavior: The hydroid *Hydractinia milleri* encrusts the shell with the hermit crab in it and overgrows the shell as the crab grows (Cowles, 2007).

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Fig. 1. Dorsal view of *Pagurus dalli* individual collected from a depth of 30 m offshore Cape Arago, OR on August 6, 2018. Shell is covered with acorn barnacles.